

# PATENT COOPERATION TREATY

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BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
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PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT  
OR THE DECLARATION

(PCT Rule 44.1)

From the INTERNATIONAL SEARCHING AUTHORITY

To:

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN  
LLP  
Attn. Fahmi, Tarek  
12400 Wilshire Boulevard  
7th Floor  
Los Angeles, California 90025  
UNITED STATES OF AMERICA

Date of mailing  
(day/month/year)

26/01/2004

Applicant's or agent's file reference

6317P037PCT

FOR FURTHER ACTION

See paragraphs 1 and 4 below

International application No.

PCT/US 03/15018

International filing date

(day/month/year)

12/05/2003

Applicant

APPLIED MATERIALS, INC.

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

**Filing of amendments and statement under Article 19:**

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

**When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

**Where?** Directly to the International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland  
Facsimile No.: (41-22) 740.14.35

**For more detailed instructions,** see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within **19 months** from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

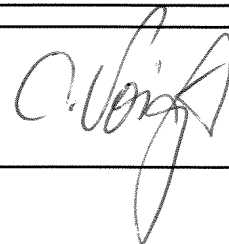
Within **20 months** from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority

 European Patent Office, P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk  
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Authorized officer

Christine Voigt



# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference  6317P037PCT	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No.  PCT/US 03/15018	International filing date (day/month/year)  12/05/2003	(Earliest) Priority Date (day/month/year)  13/05/2002
Applicant  APPLIED MATERIALS, INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 8 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

METHOD AND APPARATUS FOR SEPARATING PRIMARY AND SECONDARY CHARGED PARTICLE BEAMS

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☒ because this figure better characterizes the invention.

4  
☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 03/15018

### Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

A beam directing method and device are presented for spatially separating between a primary charged particle beam BR and a beam of secondary particles BS returned from a sample 2 as a result of its interaction with the primary charged particle beam. The primary charged particle beam is directed towards the beam directing device along a first axis OA' passing an opening 9A in a detector 9, which has charged particle detecting regions 9B outside this opening. The trajectory of the primary charged particle beam is then affected to cause the primary charged particle beam propagation to the sample along a second axis OA" substantially parallel to and spaced-apart from the first axis. This causes the secondary charged particle beam propagation to the detecting region outside the opening in the detector.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/15018

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01J37/147 G01N23/225 H01J37/28

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01J G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 13, 30 November 1998 (1998-11-30) -& JP 10 214586 A (HORON:KK), 11 August 1998 (1998-08-11) abstract; figures 1,2 ---	1-10, 21-33
X	WO 02 37523 A (KONINKL PHILIPS ELECTRONICS NV) 10 May 2002 (2002-05-10) abstract page 7, line 6 -page 9, line 26; figure 1 --- -/--	1-10, 21-33

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## ° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

14 January 2004

Date of mailing of the international search report

26.01.04

Name and mailing address of the ISA

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Authorized officer

Lang, T

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/15018

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 896 036 A (ROSE HARALD ET AL) 23 January 1990 (1990-01-23) abstract column 2, line 51 -column 3, line 53; figure 1 column 4, line 55 -column 5, line 50; figures 3A,3B claim 19 ---	21-29
X	US 6 194 729 B1 (WEIMER EUGEN) 27 February 2001 (2001-02-27) abstract column 4, line 59 -column 6, line 45; figure 1 ---	21-29
X	WO 99 46797 A (ESSERS ERIK) 16 September 1999 (1999-09-16) abstract page 26, paragraph 2 -page 29, paragraph 1; figure 9 ---	1,21
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 11, 30 September 1999 (1999-09-30) & JP 11 162384 A (HITACHI LTD), 18 June 1999 (1999-06-18) abstract; figure ---	
A	WO 01 45136 A (ADAMEC PAVEL ;GOLDENSHTEIN ALEX (IL); PEARL ASHER (IL); PETROV IGO) 21 June 2001 (2001-06-21) cited in the application figures 3-5 ---	
X	PATENT ABSTRACTS OF JAPAN vol. 014, no. 385 (P-1094), 20 August 1990 (1990-08-20) -& JP 02 145947 A (SHIMADZU CORP), 5 June 1990 (1990-06-05) abstract; figure 1 ---	11,43
A	US 6 184 526 B1 (KOHAMA YOSHIAKI ET AL) 6 February 2001 (2001-02-06) figures 18,19 -----	11,43

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 03/15018

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 9, 10, 12-20, 34-42  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-8,21-33

A method and a device for separating between a primary charged particle beam and a secondary charged particle beam, the secondary charged particle beam resulting from interaction of the primary charged particle beam with a sample, comprising directing the primary charged particle beam along a first axis passing through an opening in a detector which has charged particle detection regions outside said opening, and affecting the trajectory of the primary charged particle beam propagation to the sample along a second axis, thereby causing the secondary charged particle beam propagation to the detecting region of said detector outside said opening;

wherein said second axis is substantially parallel and spaced apart from said first axis.

2. Claims: 11,43

A method and a device for separating between a primary charged particle beam and a secondary charged particle beam, the secondary charged particle beam resulting from interaction of the primary charged particle beam with a sample, comprising directing the primary charged particle beam along a first axis passing through an opening in a detector which has charged particle detection regions outside said opening, and affecting the trajectory of the primary charged particle beam propagation to the sample along a second axis, thereby causing the secondary charged particle beam propagation to the detecting region of said detector outside said opening;

wherein the primary charged particle beam is passed through a beam directing device that includes a focusing assembly defining an optical axis, which optical axis forms an angle with said first axis and is substantially parallel to said second axis.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 9,10,12-20,34-42

In view of the large number and also the wording of the claims presently on file, in particular of the independent claims, which render it difficult, if not impossible, to determine the matter for which protection is sought, the present application fails to comply with the clarity and conciseness requirements of Article 6 PCT (see also Rule 6.1(a) PCT) to such an extent that a meaningful search is impossible. Independent of the above reasoning, the claims also lack support, and the application lacks disclosure, so that a meaningful search over the whole of the claimed scope is impossible: e.g. the application does not disclose a way to carry out an embodiment where the first and second axes are parallel AND form an angle with the optical axis of the focusing assembly, which is however claimed in independent claims 19 and 34.

Consequently, the search has been carried out for those parts of the application which do appear to be clear, concise, and supported by the description, namely those apparatus/methods relating to claims 1-8 and 21-33 and recited in the description in relation to figures 4-7.

Further, the subject-matter of claims 11 and 43 (and recited in the description in relation to figure 8) also appears to meet these requirements, but is not unitary with the above-mentioned subject-matter (Rule 13 PCT, see separate sheet).

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.



## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 03/15018

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 10214586	A	11-08-1998	NONE	
WO 0237523	A	10-05-2002	WO 0237523 A2 EP 1354335 A2 US 2002109089 A1	10-05-2002 22-10-2003 15-08-2002
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JP 11162384	A	18-06-1999	JP 3356270 B2	16-12-2002
WO 0145136	A	21-06-2001	WO 0145136 A1 EP 1238405 A1 JP 2003517199 T	21-06-2001 11-09-2002 20-05-2003
JP 02145947	A	05-06-1990	JP 1740329 C JP 4027665 B	15-03-1993 12-05-1992
US 6184526	B1	06-02-2001	JP 10197462 A JP 10197463 A JP 2000113848 A JP 10255709 A	31-07-1998 31-07-1998 21-04-2000 25-09-1998